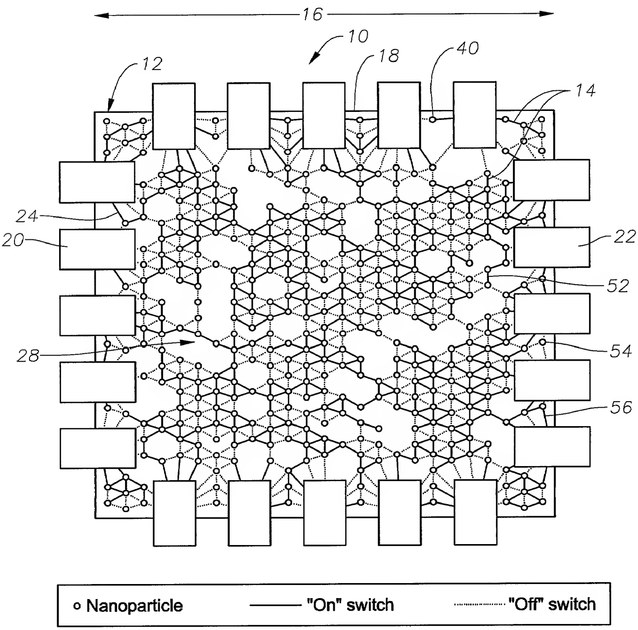


Fig. 1

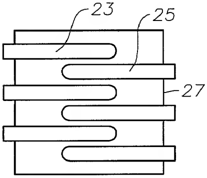


Fig. 2A

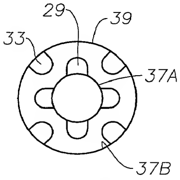


Fig. 2B

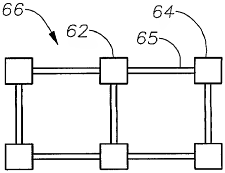
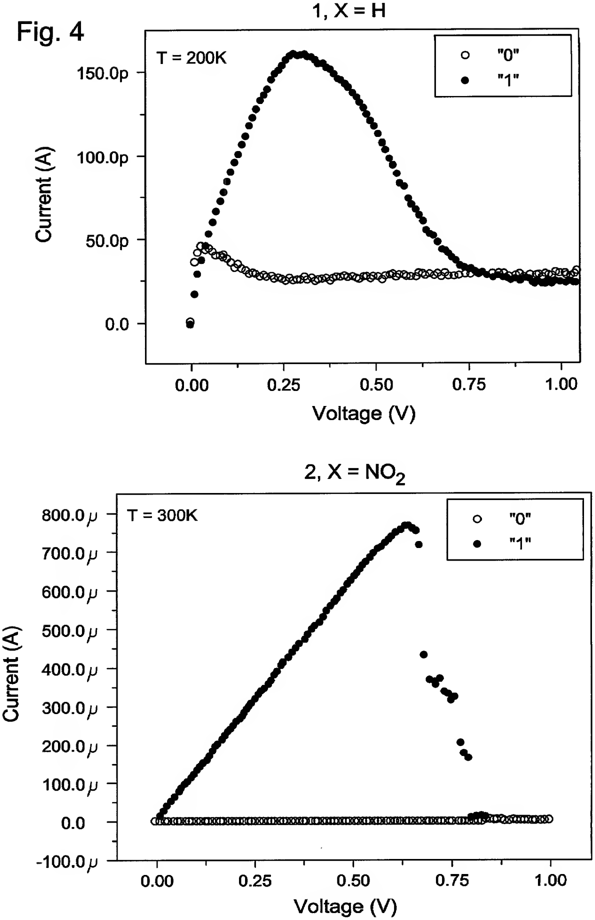


Fig. 5

Fig. 4


1, X = H
T = 200K
○ "0"
● "1"
Current (A)
150.0p
100.0p
50.0p
0.0
0.00
0.25
0.50
0.75
1.00
Voltage (V)
2, X = NO2
T = 300K
○ "0"
● "1"
Current (A)
800.0μ
700.0μ
600.0μ
500.0μ
400.0μ
300.0μ
200.0μ
100.0μ
0.0
-100.0μ
0.00
0.25
0.50
0.75
1.00
Voltage (V)

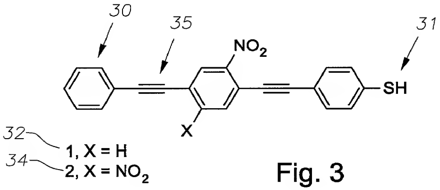


Fig. 3

Untrained Nanocell

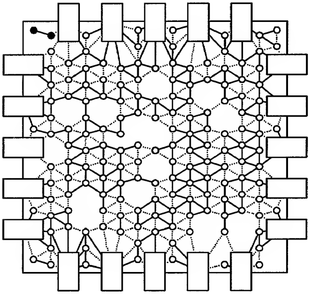


Fig. 7

Nanocell Trained as Inverter

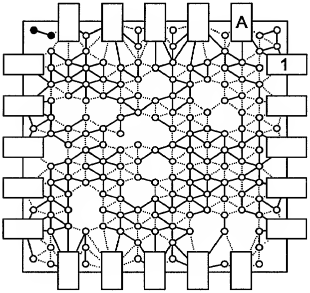
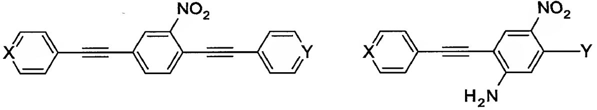


Fig. 8

Inverter Truth Table	
Input A	Output 1
0	1
1	0



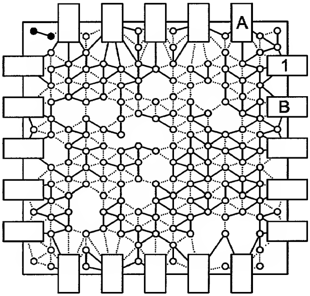
X = Y = N
X = CH =, Y = N
X = N, Y = CH

X = N, Y = ethynylpyridine
X = CSAc, Y = ethynylpyridine
X = N, Y = phenyl

Fig. 6

Nanocell Trained as Nand

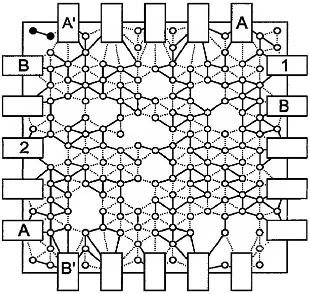
Fig. 9



Nand Truth Table		
Input A	Input B	Output 1
0	0	1
0	1	1
1	0	1
1	1	0

Nanocell Trained as Inverse Half Adder

Fig. 10



Inverse of Half Adder Truth Table			
Input A	Input B	Output 1	Output 2
0	0	1	1
0	1	1	0
1	0	1	0
1	1	0	1